

Classification and Properties of Elements

Fill in the following table.

Element	Symbol	Group	Period	Family
Mercury	Hg	12	6	Transition element
Boron	B	13	3	Metalloid
Potassium	K	1	4	Alkali metal
Krypton	Kr	18	4	Noble Gas
Lead	Pb	14	6	Other metal
Uranium	U	X	7	inner transition metal
Argon	Ar	17	3	noble gas
Lutetium	Lu	X	6	inner transition metal
Radium	Ra	2	7	Alkaline Earth metal
Carbon	C	14	2	Nonmetal

Metals, Non-Metals and Metalloids

Identify each of the following as metal, non-metal or metalloid. Also identify each as a representative group element or transition element.

	Metal	Non-metal	Metalloid	Representative	Transition
Oxygen (O)		✓		✓	
Barium (Ba)	✓			✓	
Germanium (Ge)	✓			✓	
Iron (Fe)	✓			✓	✓
Neon (Ne)		✓		✓	
Praseodymium (Pr)	✓				✓

Which of the following elements are likely to conduct electricity? (Circle all that apply)

Cl (Sr) (Li) Ar (Sn) C Br (Cu)

Which of the following are likely to be brittle solids or gases at room temperature? (Circle all that apply)

(Cl) Sr Si Li (Ar) Sn (C) (Br)

The description applies to a metal, a nonmetal, or a metalloid. Write the correct letter in the space provided. Letters can be used more than once.

- c 1. are malleable
a 2. are dull or shiny
b 3. are poor conductors
a, b 4. tend to be brittle and unmalleable as solids
c 5. are almost always shiny
a 6. are also called semimetals
b 7. are almost always dull
a 8. are somewhat ductile
a 9. include boron, silicon, antimony
c 10. include lead, tin, copper
b 11. include sulfur, iodine, neon

- a. metalloids
b. nonmetals
c. metals

Periodic Trends

1. Which atom in each pair has the **larger** atomic radius?

- a) O or C b) Be or Ba

2. Which atom in each pair has the **larger** electronegativity?

- a) Al or Si b) Na or K c) O or P

4. Consider atoms of the following, which are located as shown in the Periodic Table:

S Cl Se Br

a) Which has the **highest** electronegativity? Cl

c) Which has the **smallest** atomic radius? Cl